

WHAT IS CLAIMED IS:

1. A blood glucose detector for implantation within a blood vessel, comprising:
at least two supports, each having a first side for contacting the wall of the vessel and a second side for facing radially inwardly toward the center of the vessel;
and
a sensor located between at least two supports and having a sensing surface thereon;
wherein the sensing surface is spaced radially inwardly from the first side by a distance of at least about 0.2 mm, such that the velocity of blood in the vessel inhibits obstruction of the sensing surface.
2. A blood glucose detector as in Claim 1, wherein the distance is at least about 0.5mm.
3. A blood glucose detector as in Claim 1, wherein the distance is within the range of from about 0.3 mm to about 2.5 mm.
4. A blood glucose detector as in Claim 1, wherein the distance is sufficient to increase the blood flow velocity at the sensing surface to from about 125% to about 200% of the blood flow velocity immediately proximal to the support.
5. A blood glucose detector as in Claim 1, further comprising a transmitter mounted to at least one of the supports, for transmitting information from the sensor to an external receiver.
6. A blood glucose detector as in Claim 5, wherein an inductive link supplies power to the transmitter.
7. A blood glucose detector as in Claim 1, further comprising a thin film rechargeable battery carried by the support.
8. A blood glucose detector as in Claim 1, wherein the supports comprise enlargeable frames.
9. A blood glucose detector as in Claim 8, wherein the supports comprise expandable tubular bodies.
10. A blood glucose detector as in Claim 1, wherein the supports comprise balloon expandable stents.

11. A blood glucose detector as in Claim 1, wherein the supports comprise self expandable stents.

12. A blood glucose detector as in Claim 9, further comprising tubular sheaths on the tubular bodies.

13. A blood glucose detector as in Claim 12, wherein the sheaths are on the radially outwardly facing surface of the tubular bodies.

14. A blood glucose detector as in Claim 12, wherein the sheaths are on the radially inwardly facing surface of the tubular bodies.

15. A blood glucose detector as in Claim 12, wherein the sheaths comprise ePTFE.

16. A blood glucose detector as in Claim 1, wherein the sensor comprises an analyte permeable membrane and an enzyme gel layer.

17. A blood glucose detector as in Claim 16, wherein the analyte permeable membrane comprises a glucose permeable membrane.

18. A blood glucose detector as in Claim 16, wherein the enzyme comprises glucose oxidase.

19. An implantable sensor for sensing the presence of an analyte in a vessel, comprising:

at least two substantially tubular support structures for anchoring the sensor in the vessel, each support structure having a side wall with a luminal side facing toward the center of the vessel and an abluminal side facing toward the wall of the vessel;

a sensor housing carried by the support structures, the housing having a streamlined exterior configuration to minimize blood flow turbulence and located between two support structures;

a power supply and electrical circuitry in the housing; and

a sensing surface exposed to the exterior of the housing;

wherein the sensing surface is positioned on the radially inwardly most portion of the luminal side of the housing.

20. An implantable sensor as in Claim 19, wherein the support structures are directly connected to one another.

21. An implantable sensor as in Claim 19, wherein the support structures are not directly connected to one another.

22. An implantable sensor as in Claim 19, wherein the sensor housing is positioned on the luminal side of the support structures.

23. An implantable sensor as in Claim 19, further comprising a tubular sleeves surrounding the tubular support structures.

24. An implantable sensor as in Claim 23, wherein the tubular sleeves are on the radially outwardly facing surface of the tubular support structures.

25. An implantable sensor as in Claim 23, wherein the tubular sleeve is on the radially inwardly facing surface of the tubular support structures.

26. An implantable sensor as in Claim 23, wherein the tubular sleeves comprise ePTFE.

27. An implantable sensor as in Claim 19, further comprising an analyte permeable membrane and an enzyme gel layer.

28. An implantable sensor as in Claim 27, wherein the enzyme gel layer comprises glucose oxidase.

29. An implantable sensor as in Claim 19, wherein the sensor comprises an amperometric sensor.

30. An implantable sensor as in Claim 19, wherein the sensor comprises an electrode selected from the group consisting of oxygen electrodes, hydrogen peroxide electrodes, and electrodes with mediated electron transfer.

31. A method of reducing the cross sectional profile of an intraluminal electronic device, comprising the steps of packaging the device in at least two separate components, and securing the components to at least a first anchor and a second anchor for retaining the components axially spaced apart within the lumen.

32. A method of reducing the cross sectional profile of an intraluminal electronic device as in Claim 31, comprising a first component and a second component, and a first anchor, a second anchor, and a third anchor.

33. A method of reducing the cross sectional profile of an intraluminal electronic device, comprising the steps of positioning the device at a site in a lumen, and activating a

first anchor on a first side of the device and a second anchor on a second side of the device to retain the device in the lumen.

34. A method of reducing the cross sectional profile of an intraluminal electronic device as in Claim 33, wherein the activating step comprises permitting at least one of the first and second anchors to self expand.

35. A method of reducing the cross sectional profile of an intraluminal electronic device as in Claim 33, wherein the activating step comprises forcibly expanding at least one of the first and second anchors.

36. A method of reducing the cross sectional profile of an intraluminal electronic device as in Claim 33, wherein the device comprises at least two electrical components and at least two anchors.

37. A method of reducing the cross sectional profile of an intraluminal electronic device as in Claim 36, wherein the device comprises at least two electrical components and at least three anchors.

38. A method of reducing the cross sectional profile of an intraluminal electronic device as in Claim 36, wherein the device comprises at least three electrical components and at least three anchors.

39. An intraluminal electronic device, comprising a first housing having a first anchor on a proximal side of the housing and a second anchor on a distal side of the housing, wherein the first and second anchors are axially separated by at least the axial length of the housing.

40. An intraluminal electronic device as in Claim 39, comprising at least a second housing.

41. An intraluminal electronic device as in Claim 40, comprising at least a third anchor.

42. An intraluminal electronic device as in Claim 40, wherein at least one of the anchors is balloon expandable.

43. An intraluminal electronic device as in Claim 40, wherein at least one of the anchors is self expandable.

44. An intraluminal electronic device as in Claim 40, comprising a sensor on the housing for sensing at least one blood analyte.